

Application No.: 09/970,148
By: Kisilevsky, et al.

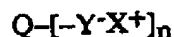
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In the Claims:

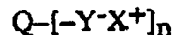
Please *cancel* all pending claims without waiver or prejudice. In lieu thereof, please substitute new claims 45-67, presented below:

45. (New) A packaged pharmaceutical composition for treating a viral infection, comprising a container holding a therapeutically effective amount of a therapeutic compound; and instructions for using said therapeutic compound for treating the viral infection, wherein said therapeutic compound is of the formula:



wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, and an aromatic group, wherein said heterocyclic group is selected from the group consisting of pyrrole, furan, thiophene, imidazole, oxazole, thiazole, triazole, pyrazole, pyridine, pyrazine, pyridazine, quinoline, and indole; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof.

46. (New) A packaged pharmaceutical composition for treating a bacterial infection, comprising a container holding a therapeutically effective amount of a therapeutic compound; and instructions for using said therapeutic compound for treating the bacterial infection, wherein said therapeutic compound is of the formula:



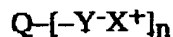
wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, and an aromatic group; wherein said bacterial infection is *Chlamydia trachomatis*, *Legionella pneumophila*, *Bordetella pertussis*, or *Mycoplasma pneumoniae*; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof.

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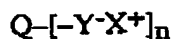
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47. (New) A pharmaceutical composition for treating a viral infection in a subject, comprising a pharmaceutically acceptable carrier; and a therapeutically effective amount of a therapeutic compound of the formula:



wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, and an aromatic group, and wherein the heterocyclic group is selected from the group consisting of pyrrole, furan, thiophene, imidazole, oxazole, thiazole, triazole, pyrazole, pyridine, pyrazine, pyridazine, quinoline, and indole; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof.

48. (New) A pharmaceutical composition for treating a bacterial infection in a human, comprising a pharmaceutically acceptable carrier; and a therapeutically effective amount of a therapeutic compound of the formula:



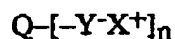
wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, an aromatic group and combinations thereof; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof; and wherein said bacterial infection is *Chlamydia trachomatis*, *Legionella pneumophila*, *Bordetella pertussis*, or *Mycoplasma pneumoniae*.

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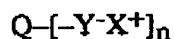
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49. (New) The composition of any one of claims 45, 46, 47, or 48, wherein the therapeutic compound is selected from the group consisting of 1,3-propanedisulfonic acid, 3-amino-1-propanesulfonic acid, 3-dimethylamino-1-propanesulfonic acid sodium salt, 2-(3-sulfopropyl)-1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indole sodium salt, 3-[2-(6-methoxy-1,2,3,4-tetrahydroisoquinoliny)]-1-propanesulfonic acid, 3-(2-hydroxyethyl)amino-1-propanesulfonic acid, 3-(3-hydroxy-1-propyl)amino-1-propanesulfonic acid, (-)-3-[(R)-2-hydroxy-1-propyl]amino-1-propanesulfonic acid, 3-(4-hydroxy-1-butyl)amino-1-propanesulfonic acid, 3-(5-hydroxy-1-pentyl)amino-1-propanesulfonic acid, 3-(6-hydroxy-1-hexyl)amino-1-propanesulfonic acid, 3-hexylamino-1-propanesulfonic acid, 3-undecylamino-1-propanesulfonic acid, and 3-octadecylamino-1-propanesulfonic acid, and pharmaceutically acceptable salts or esters thereof.
50. (New) A method of treating a bacterial infection in a human comprising administering to said human a compound of the formula:



wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, an aromatic group and combinations thereof; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof; and wherein said bacterial infection is *Chlamydia trachomatis*, *Legionella pneumophila*, *Bordetella pertussis*, or *Mycoplasma pneumoniae*.

51. (New) A method of treating a viral infection in a subject comprising administering to said subject a compound of the formula:



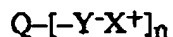
wherein Q is a carrier molecule, selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, and an aromatic group, wherein said heterocyclic group is selected from the group consisting of pyrrole, furan, thiophene, imidazole, oxazole, thiazole, triazole, pyrazole, pyridine, pyrazine, pyridazine, quinoline, and indole; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof, such that said viral infection is treated.

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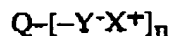
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- (out B1)
52. (New) A method of modulating interaction between a bacterium and a glycosaminoglycan in a human comprising administering to said human a compound of formula:



wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, an aromatic group and combinations thereof; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof; wherein said bacterium is *Chlamydia trachomatis*, *Legionella pneumophila*, *Bordetella pertussis*, or *Mycoplasma pneumoniae*.

53. (New) The method of claim 52, wherein said method includes inhibiting interaction between said bacterium and a cell surface.
54. (New) A method for modulating interaction between a virus and a glycosaminoglycan in a subject comprising administering to said subject a compound of formula:



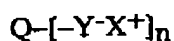
wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, an aromatic group and combinations thereof, wherein said heterocyclic group is selected from the group consisting of pyrrole, furan, thiophene, imidazole, oxazole, thiazole, triazole, pyrazole, pyridine, pyrazine, pyridazine, quinoline, and indole; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof.

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55. (New) The method of any one of claims 50, 51, 52, or 54, wherein the compound is selected from the group consisting of 1,3-propanedisulfonic acid, 3-amino-1-propanesulfonic acid, 3-dimethylamino-1-propanesulfonic acid sodium salt, 2-(3-sulfopropyl)-1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indole sodium salt, 3-[2-(6-methoxy-1,2,3,4-tetrahydroisoquinoliny)]-1-propanesulfonic acid, 3-(2-hydroxyethyl)amino-1-propanesulfonic acid, 3-(3-hydroxy-1-propyl)amino-1-propanesulfonic acid, (-)-3-[(R)-2-hydroxy-1-propyl]amino-1-propanesulfonic acid, 3-(4-hydroxy-1-butyl)amino-1-propanesulfonic acid, 3-(5-hydroxy-1-pentyl)amino-1-propanesulfonic acid, 3-(6-hydroxy-1-hexyl)amino-1-propanesulfonic acid, 3-hexylamino-1-propanesulfonic acid, 3-undecylamino-1-propanesulfonic acid, and 3-octadecylamino-1-propanesulfonic acid, and pharmaceutically acceptable salts or esters thereof.
56. (New) The method of claim 51 or claim 54, wherein the virus is *Herpesviridae*.
57. (New) The method of claim 54, wherein said method includes inhibiting interaction between said virus and a cell surface.
58. (New) A method for treating a human afflicted with *Chlamydia trachomatis* comprising administering to said human a compound having the formula:



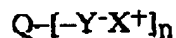
wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, an aromatic group and combinations thereof; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer selected such that the biodistribution of the therapeutic compound for an intended target site is not prevented while maintaining activity of the therapeutic compound; such that the subject afflicted with *Chlamydia trachomatis* is treated.

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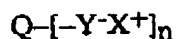
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59. (New) A method for treating a subject afflicted with HSV comprising administering to said subject a compound having the formula:



wherein Q is a carrier molecule selected from the group consisting of an aliphatic group, an alicyclic group, a heterocyclic group, an aromatic group and combinations thereof, and wherein said heterocyclic group selected from the group consisting of pyrrole, furan, thiophene, imidazole, oxazole, thiazole, triazole, pyrazole, pyridine, pyrazine, pyridazine, quinoline, and indole; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer selected such that the biodistribution of the therapeutic compound for an intended target site is not prevented while maintaining activity of the therapeutic compound; such that the subject afflicted with HSV is treated.

60. (New) A method for inhibiting the binding of a chemokine to a glycosaminoglycan comprising administering to a subject a compound of the formula:



wherein Q is a carrier molecule; Y⁻ is -SO₃⁻ or -OSO₃⁻; X⁺ is a cationic group; and n is an integer; or a pharmaceutically acceptable ester or salt thereof, such that binding of the chemokine to the glycosaminoglycan is inhibited.

61. (New) The method of claim 60, wherein said glycosaminoglycan is heparan sulfate.
62. (New) The method of claim 60, wherein said chemokine is selected from the group consisting of RANTES, Eotaxin, and IL-8.
63. (New) The method of claim 60, wherein said carrier molecule is selected from the group consisting of a carbohydrate, a polymer, a peptide, a peptide derivative, an aliphatic group, an alicyclic group, a heterocyclic group, an aromatic group and combinations thereof.

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64. (New) The method of claim 60, wherein the compound is selected from the group consisting of 1,3-propanedisulfonic acid, 3-amino-1-propanesulfonic acid, 3-dimethylamino-1-propanesulfonic acid sodium salt, 2-(3-sulfopropyl)-1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indole sodium salt, 3-[2-(6-methoxy-1,2,3,4-tetrahydroisoquinoliny)]-1-propanesulfonic acid, 3-(2-hydroxyethyl)amino-1-propanesulfonic acid, 3-(3-hydroxy-1-propyl)amino-1-propanesulfonic acid, (-)3-[(R)-2-hydroxy-1-propyl]amino-1-propanesulfonic acid, 3-(4-hydroxy-1-butyl)amino-1-propanesulfonic acid, 3-(5-hydroxy-1-pentyl)amino-1-propanesulfonic acid, 3-(6-hydroxy-1-hexyl)amino-1-propanesulfonic acid, 3-hexylamino-1-propanesulfonic acid, 3-undecylamino-1-propanesulfonic acid, and 3-ocradecylamino-1-propanesulfonic acid, poly(vinylsulfonate) sodium salt, 4,5-dihydroxy-1,3-benzenedisulfonic acid sodium salt, and 3-cyclohexylamino-1-propanesulfonic acid, methylene diphosphonic acid, and pharmaceutically acceptable salts or esters thereof.
65. (New) The method of claim 60, wherein the compound is selected from the group consisting of trehalose octasulfate, octasodium salt; *trans*-4-hydroxy-L-proline-4-sulfate disodium salt, 3-phosphonopropanesulfonic acid trisodium salt, trisodium phosphonoformate, nitrilo(methylene) triphosphonic acid, 3-phosphonopropanesulfonic acid trisodium salt, *O*-phospho-L-serine, 2-thiopheneboronic acid, and pharmaceutically acceptable salts or esters thereof.
66. (New) The method of claim 51 or claim 54, wherein the virus is cytomegalovirus (CMV).
67. (New) The method of claim 51 or claim 54, wherein the virus is human immunodeficiency virus (HIV).